MI FluFocus

Influenza Surveillance and Avian Influenza Update

Michigan Department of Community Health
Bureau of Epidemiology
Bureau of Laboratories

Editor: Susan Vagasky, DVM
VagaskyS@Michigan.gov

October 19, 2006
Vol. 3; No. 42

New updates in this issue:

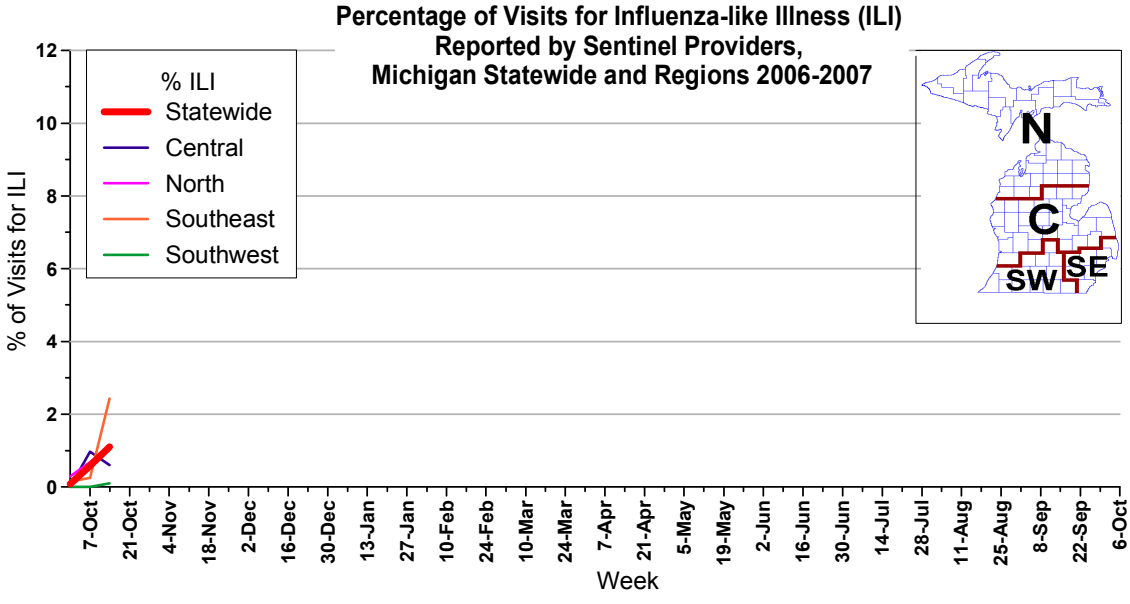
- **Syndromic Surveillance:** Flu-like illness in MDSS, ED visits and OTC products all remain steady.
- **Sentinel Surveillance:** New sentinel provider data for the week ending October 14.
- **Avian Influenza:** 3 new fatalities in Indonesia; Low pathogenicity H5N1 found in wild birds in Ohio.

Michigan Disease Surveillance System: The sharp increase in flu-like illness activity associated with the beginning of the school year reporting has now slowed. This increasing trend, however, is expected to continue as the respiratory illness season progresses. The current flu-like illness activity is comparable to that seen from last year at this time.

Emergency Department Surveillance: Emergency department visits due to constitutional and respiratory complaints continue to remain steady and are consistent with what was seen this time last year. The levels of constitutional syndrome complaints have only slightly decreased, while respiratory syndrome complaints have only slightly increased. Four constitutional alerts in Regions 1(1), 2S(2), and 7(1) and four regional respiratory alerts in Regions 2S(1), 5(2), and 6(1) were generated in the past week.

Over-the-Counter Product Surveillance: Over-the-counter influenza indicators support the conclusions drawn above. Over the past week, all eight indicators demonstrated sales levels that were either stable or only decreasing slightly. Only sales of chest rubs have noticeably dropped in the last week, but seem comparable with what was seen this time last year.

Sentinel Surveillance (**as of October 19, 2006):** During the week ending October 14, 2006, the proportion of visits due to influenza-like illness (ILI) increased for the second consecutive week to 1.1% of all visits, representing 56 cases of ILI out of 5306 total patient visits. Twenty-five sentinels provided data for this report. Most of the increased ILI activity was reported in the Southeast, where visits due to ILI increased from 0.3% last week to 2.2% this week. An increased rate of ILI was also reported in the North (1.1%), but rates in the Central and Southwest regions remained low at 0.6% at 0.1%, respectively.



As part of pandemic influenza preparedness, CDC and MDCH highly encourage and recommend year-round participation from all sentinel providers. New practices are encouraged to join influenza sentinel surveillance program today! Contact Rachel Potter at 517-335-9710 or potterr1@michigan.gov for more information.

Laboratory Surveillance (as of October 19): No reports were received for the past week. There are no culture-confirmed cases from the MDCH Laboratory for the 2006-2007 influenza season. In addition, no reports of positive culture-confirmed influenza cases have been reported from the 16 Michigan Sentinel laboratories across the state.

***As a reminder, the positive predictive value of influenza rapid tests decreases during times of low influenza prevalence. MDCH suggests that during periods of low influenza activity in your community, all positive rapid tests results be confirmed by sending in a specimen for viral culture; this can be arranged through your local health department.

Influenza-Associated Pediatric Mortality (as of October 19): There were no new reports this week. For the 2006-2007 season, there are no confirmed reports of influenza-related pediatric mortality.

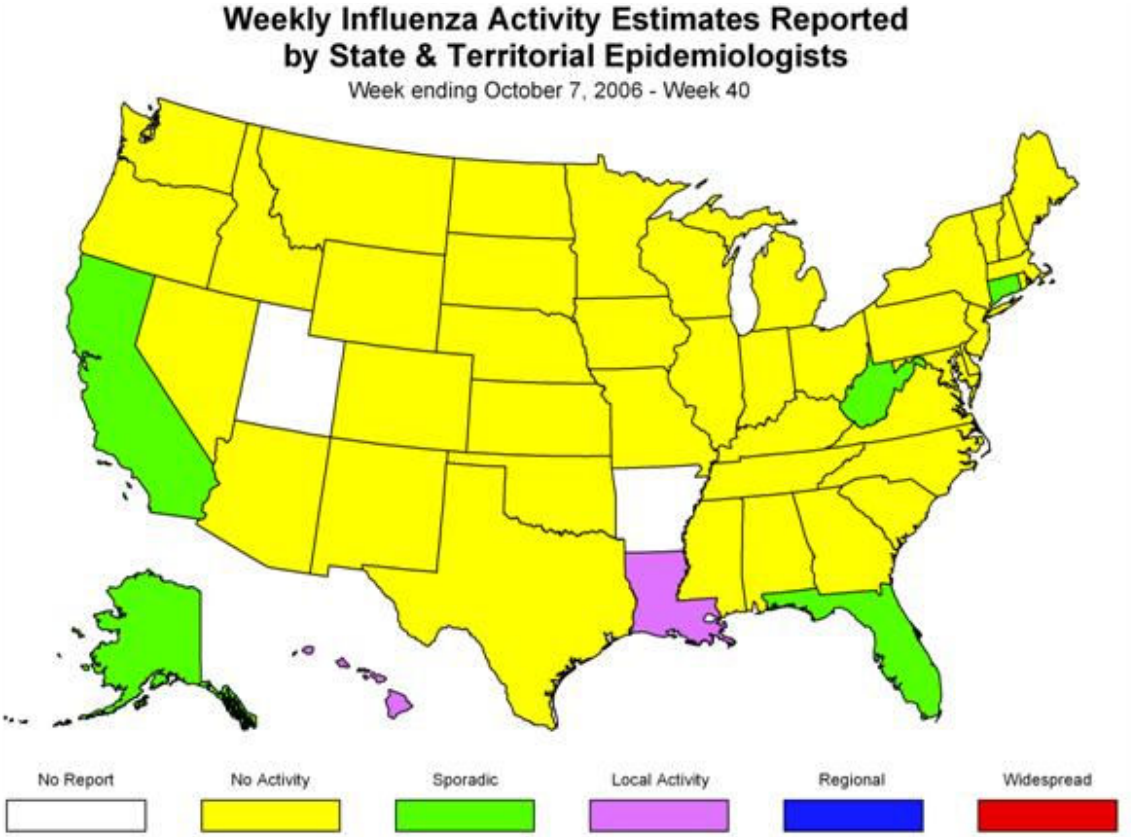
***Reminder: The CDC has asked all states to continue to collect information on any pediatric death associated with influenza infection. This includes not only any death in a child less than 18 years of age resulting from a clinically compatible illness confirmed to be influenza by an appropriate laboratory or rapid diagnostic test, but also unexplained death with evidence of an infectious process in a child. Refer to http://www.michigan.gov/documents/fluletter_107562_7.pdf for the complete protocol. It is important to immediately call or fax information to MDCH to ensure that appropriate clinical specimens can be obtained.

Congregate Settings Outbreaks (as of October 19): No reports were received during the past reporting week. There have been no reports of congregate influenza outbreaks to MDCH for the 2006-2007 influenza season.

National (CDC): During week 40 (October 1 – October 7, 2006), a low level of influenza activity was reported in the United States. Three (0.4%) specimens tested by U.S. World Health Organization (WHO) and National Respiratory and Enteric Virus Surveillance System (NREVSS) collaborating laboratories were positive for influenza. The proportion of patient visits to sentinel providers for influenza-like illness (ILI) and the proportion of deaths attributed to pneumonia and influenza were below baseline levels. Two states reported local influenza activity; five states reported sporadic influenza activity; 41 states, New York City, and the District of Columbia reported no influenza activity; and two states did not report. During week 40, WHO and NREVSS laboratories reported 813 specimens tested for influenza viruses, three of which were positive: one influenza A virus that was not subtyped (West North Central region) and two influenza B viruses (New England and West South Central regions).

From week 21 through week 39 (weeks ending May 21 – September 30), WHO and NREVSS laboratories tested 20,909 specimens for influenza and 541 (2.6%) were positive. Of the positive results, 111 (20.5%) were influenza A (H1) viruses, 3 (0.6%) were influenza A (H3) viruses, 195 (36.0%) were influenza A viruses that were not subtyped, and 232 (42.9%) were influenza B viruses. Approximately half (56%) of these isolates were tested from the middle of May through late June, when 4.0% of specimens tested were positive for influenza. Activity continued to decline through late August, when 1.4% of specimens tested were positive for influenza. Isolates were reported from all surveillance regions during the summer.

To access the CDC weekly surveillance report throughout the influenza season, visit http://www.cdc.gov/flu/weekly/fluactivity.htm.



International (WHO, as of August 30): During weeks 31- 33, with the exception of New Zealand, where regional influenza A(H3N2) activity continued, overall influenza activity in both northern and southern hemispheres was low. In Australia, localized influenza activity continued to be reported during weeks 31–33. Influenza A and B viruses co-circulated. During weeks 31-33, influenza A activity in New Zealand remained similar to previous weeks and was reported as regional. Low influenza activity was reported in Argentina (H1, A and B), Hong Kong, Special Administrative Region of China (H1, H3 and B), Japan (H1), Madagascar, South Africa (H3 and B), and Uruguay (H1, A and B). Sweden reported an A(H3N2) case imported from China during week 33. Mexico, Portugal and Slovenia reported no influenza activity.

MDCH reported **NO ACTIVITY** to the CDC for this past week ending October 14, 2006.

End of Seasonal Report

Avian Influenza Activity

WHO Pandemic Phase: Phase 3 - Human infection(s) with a new subtype, but no human-to-human spread or rare instances of spread to a close contact.

International Update (WHO, October 16): The Ministry of Health in Indonesia has confirmed an additional three cases of human infection with the H5N1 avian influenza virus. All three cases were fatal. The first newly confirmed case occurred in a 67-year-old woman from West Java Province. She developed symptoms on October 3rd, was hospitalized on October 7th, and died on October 15th. Diagnosis was complicated by the presence of chronic diseases. Chickens reportedly died in her household and neighborhood prior to symptom onset. The second case was an 11-year-old male from South Jakarta, Jakarta Province. He developed symptoms on October 2nd, was hospitalized on October 5th, and died on October 14th. His recent history included exposure to dead chickens in his neighborhood. The third case was a 27-year-old female from Central Java Province. She developed symptoms on October 8th, was hospitalized on October 12th, and died on October 13th. The source of her exposure is currently under investigation. Of the 72 cases confirmed to date in Indonesia, 55 have been fatal.

National Wild Bird Surveillance (USDA, October 14 and 17): On October 14, the U.S. Department of Agriculture (USDA) and Department of the Interior (DOI) announced a detection of H5 and N1 avian influenza subtypes in samples from apparently healthy wild Northern pintails in Ottawa County, Ohio, that were killed by a hunter. Initial tests confirm that these wild bird samples do not contain the highly pathogenic H5N1 strain that has spread through birds in Asia, Europe and Africa. Initial test results indicate the presence of low pathogenic avian influenza (LPAI) virus, which poses no threat to human health.

The bird samples were collected on Oct. 8 through a partnership between USDA and the Ohio Division of Wildlife as part of an expanded wild bird monitoring program. Thirty five samples were collected directly from the birds and screened for H5 at the Ohio Dept of Agriculture Animal Disease Diagnostic Laboratory. Of those samples, two were sent to USDA's National Veterinary Services Laboratories (NVSL) in Ames, Iowa, for confirmatory testing and one screened by NVSL tested positive for both H5 and N1 subtypes. This does not mean these birds are infected with an H5N1 strain. It is possible that there could be two separate avian influenza viruses, one containing H5 and the other containing N1. Confirmatory testing underway at NVSL will clarify whether one or more strains of the virus are present, the specific subtype, as well as confirm the pathogenicity. These results are expected within two to three weeks and will be made public when completed.

On October 17, USDA and DOI announced final test results, which confirm that a low pathogenic avian influenza (LPAI) virus was found in samples collected last month from wild Green-winged Teals in Illinois. LPAI has been detected several times in wild birds in North America and poses no risk to human health. NVSL confirmed the presence of H6N2 through virus isolation in a pool of five samples of the 11 samples collected from wild Green-winged Teals in the Rice Lake Conservation Area of Fulton County, Illinois. Initial screening results announced on Sept. 29 indicated that H5 and N1 subtypes might be present in the collected samples, but further testing was necessary to confirm the H and N subtypes as well as pathogenicity.

The initial rapid screening tests are highly sensitive and can detect active and inactive viruses in samples. Varieties of this test can screen for the presence of all strains of avian influenza virus. Because these rapid screening tests are highly sensitive, it is not uncommon to have positive results for a specific subtype on the initial screen test and yet not be able to isolate a virus of that subtype. This was the case for these samples, which tested as a weak positive for both H5 and N1 in the initial screen tests. During confirmatory testing, H5 and N1 subtypes were not found but instead H6 and N2, confirming that the virus is LPAI.

Low pathogenic strains of avian influenza occur naturally in wild birds and typically cause only minor sickness or no noticeable signs of disease in birds. These strains are common in the U.S. and around the world. Low pathogenic avian influenza viruses are very different from the more severe highly pathogenic H5N1 circulating in parts of Asia, Europe and Africa. Highly pathogenic strains of avian influenza spread rapidly and are often fatal to chickens and turkeys.

Michigan Wild Bird Surveillance: According to the National HPAI Early Detection Data System website, which is run by the US Geological Survey and available at http://wildlifedisease.nbii.gov/ai/, Michigan has results for a total of 415 wild birds submitted for testing as of October 13. 170 of these birds were live-captured and tested, 161 were hunter-killed, 54 were sentinel animals, and 30 were dead birds that were submitted for testing. HPAI subtype H5N1 has not been recovered from any Michigan samples tested to date, or from the 26,611 birds tested nationwide.

To learn about avian influenza surveillance in Michigan wild birds or to report dead waterfowl, go to Michigan's Emerging Disease website at http://www.michigan.gov/emergingdiseases.

Please contact Susan Vagasky at VagaskyS@Michigan.gov with any questions regarding this newsletter or to be added to the weekly electronic mailing list.

Table 1. H5N1 Influenza in Poultry (Outbreaks up to October 4, 2006)
(Source: http://www.oie.int/downld/AVIAN%20INFLUENZA/A_AI-Asia.htm Downloaded 10/6/2006)

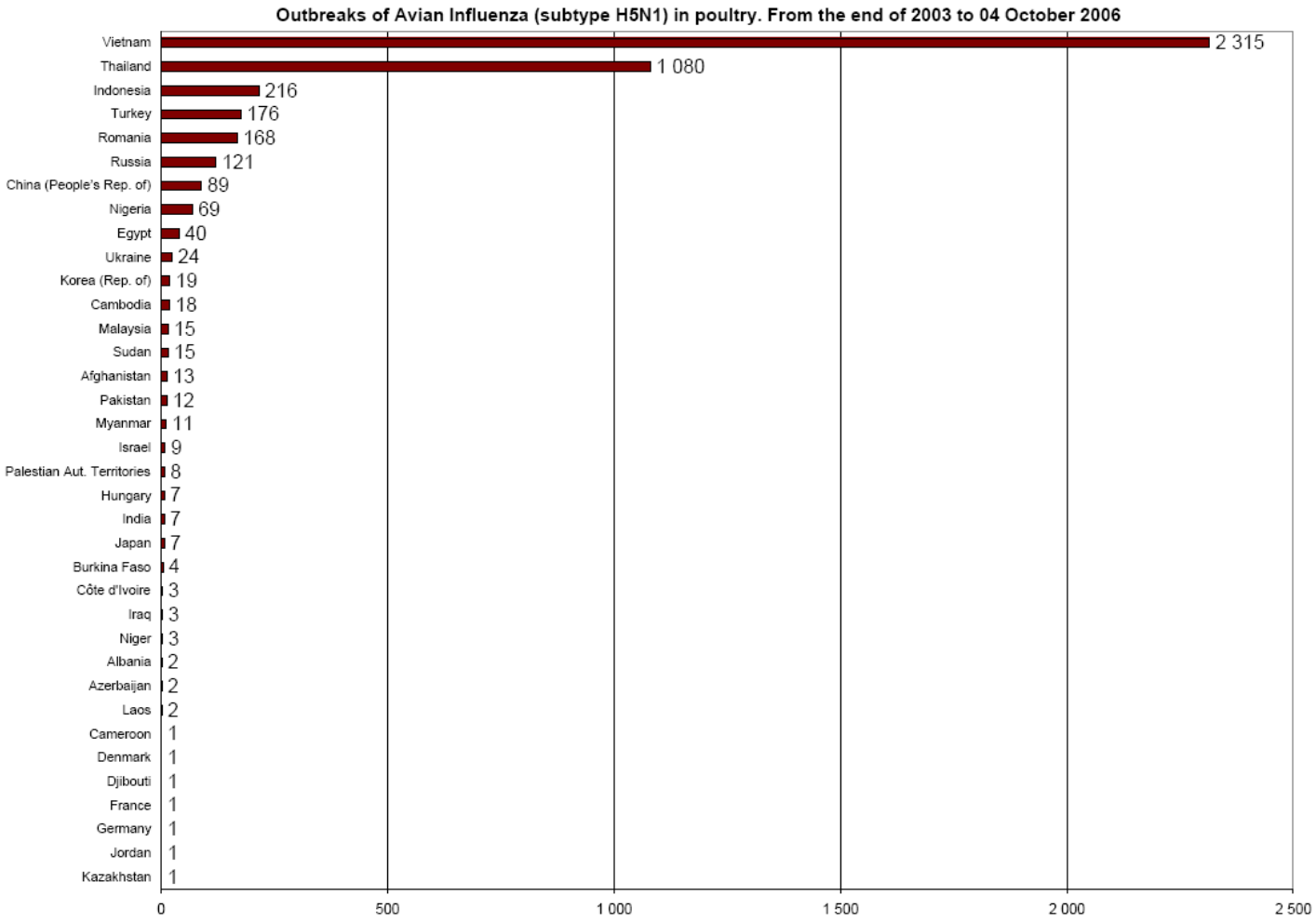


Table 2. H5N1 Influenza in Humans (Cases up to October 16, 2006)
(http://www.who.int/entity/csr/disease/avian_influenza/country/cases_table_2006_06_06/en/index.html Downloaded 10/16/2006)
Cumulative number of confirmed human cases of Avian Influenza A(H5N1) reported to WHO. The total number of cases includes number of deaths. WHO only reports laboratory-confirmed cases.

Country	2003		2004		2005		2006		Total	
	cases	deaths	cases	deaths	cases	deaths	cases	deaths	cases	deaths
Azerbaijan	0	0	0	0	0	0	8	5	8	5
Cambodia	0	0	0	0	4	4	2	2	6	6
China	1	1	0	0	8	5	12	8	21	14
Djibouti	0	0	0	0	0	0	1	0	1	0
Egypt	0	0	0	0	0	0	15	6	15	6
Indonesia	0	0	0	0	19	12	53	43	72	55
Iraq	0	0	0	0	0	0	3	2	3	2
Thailand	0	0	17	12	5	2	3	3	25	17
Turkey	0	0	0	0	0	0	12	4	12	4
Viet Nam	3	3	29	20	61	19	0	0	93	42
Total	4	4	46	32	97	42	109	73	256	151